Battlefield Tracheal Intubation for Wounded Warriors

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Battlefield Tracheal Intubation for Wounded Warrior University of Nebraska Medical Center $ 6,000,000

For an FY2009 earmark the Battlefield Tracheal Intubation project has the following objectives: Continue the development of an airway management system for use on the battlefield to make it easy to ventilate wounded soldiers by incorporating a laryngeal mask to use with the video laryngoscope and other video intubation devices; further miniaturize and harden the device to improve its portability on the battlefield and remote areas including aircraft; add patient monitoring capabilities and electronic recordkeeping; develop wireless and telemetry capabilities; explore additional uses of this technology for other battlefield injuries.
Inadequate airway management is a major contributor to morbidity and mortality in both the pre-hospital and in-hospital settings.

Helm et al – up to 85% of pre-hospital deaths from trauma may be due to airway obstruction.

Helm M. Br J of Anaesth 2006: 96(1) 67-71
• A man can live without food for 40 days
• Without water for 3 days
• Without oxygen 5 minutes

Quote from Peter Laser – Omaha NE 2007
The 5-year-old's mother said her daughter received a triple dose of sedatives during her treatment at the Little Angel Dental offices.

“Diamond received a triple dose of sedatives - an oral agent, an intravenous drug and nitrous oxide gas - during her treatment”
Why is Intubation Difficult?
Solution – Video Laryngoscopy

- Standard view-angle 10°
- Video view-angle 60°
- Light-fibres surround view-fibres
- Camera integrated in handle
- Cables to cold light source + imaging processing module
Especially useful for first responders or non anesthesia providers
Virtual perioperative care (create force multiplier for DOD) – year 4

Telementoring for airway management and sedation yr 3, 4

Perioperative Monitors yr 2-3

Telemetry and Wireless – yr 2-3

Novel Blades / Supraglottic – yr 1

Validate VL - OR, ICU, ER - now

Teleanesthesia Yr 5

Create Conscious Sedation Virtual Monitoring yr 4

Telemenitoring for airway management and sedation yr 3, 4
Raytheon/UNMC Partnership

• Telemetry solution for Video Laryngoscope
• Will create perioperative telemedicine solution
• Migrate G Phone technology into perioperative arena
• Allow interface of numerous surgical optical devices with TMED platform
Telehealth Efforts

• Operational Utility Evaluation of Video Laryngoscopy for US Air Force FY08
  – Wilford Hall, Offutt, NE ANG
  – Expansion to CSTARS and OCONUS 2009
  – Establishes Line of Communication for other Telehealth Product Expansion

• Autism Telehealth AF – Funded FY09

• Virtual Pre Op VISN 23

• Virtual Urology Clinic

• Teledermatology VISN 23 Funded

• Virtual Telepain Clinic Validated